

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 7,027,489 B2  
APPLICATION NO. : 10/004370  
DATED : April 11, 2006  
INVENTOR(S) : Pan et al.

Page 1 of 5

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

**ON THE TITLE PAGE**

At section (56), OTHER PUBLICATIONS, page 1, right column, line 8, after "No. 2. pp.", delete "267-287" and insert therefor --276-287--.

At section (56), OTHER PUBLICATIONS, page 1, right column, line 9, before the word "Klein", delete "Naja" and insert therefor --Anja--.

At section (56), OTHER PUBLICATIONS, page 2, right column, line 1, before the word "Klein", delete "Ania" and insert therefor --Anja--.

At section (56), OTHER PUBLICATIONS, page 2, right column, line 5, after "H.R.", delete "Karmimi" and insert therefor --Karimi--.

At section (56), OTHER PUBLICATIONS, page 2, right column, line 10, after "SMG2", delete "Laver" and insert therefor --Layer--.

At section (56), OTHER PUBLICATIONS, page 2, right column, line 12, before the word "Finland", delete "Heisinki" and insert therefor --Helsinki--.

**IN THE ABSTRACT**

At section (57), ABSTRACT, page 1, right column, line 4, after the word "substantially", delete "a" and insert therefor --the--.

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

**IN THE DRAWINGS**

At FIG. 4, item 54, line 1, after the word "AND", delete "A" and insert therefor --AN--.

At FIG. 4, item 56, line 3, after the word "CIRCULANT", delete "APPOXIMATION" and insert therefor --APPROXIMATION--.

At FIG. 6, item 68, line 2, after the word "RESPONSES,", delete "DETERMIN" and insert therefor --DETERMINE--.

At FIG. 6, item 68, line 2, after the word "USING", delete "A" and insert therefor --AN--.

At FIG. 6, item 72, line 1, after "R<sub>cir</sub>", delete "A" and insert therefor --AN--.

At FIG. 6, item 74, line 3, after the word "CIRCULANT", delete "APPOXIMATION" and insert therefor --APPROXIMATION--.

At FIG. 7, item 82, line 2, after the word "USING", delete "A" and insert therefor --AN--.

At FIG. 7, item 86, line 1, after the word "AND", delete "A" and insert therefor --AN--.

At FIG. 7, item 88, line 3, after the word "CIRCULANT", delete "APPOXIMATION" and insert therefor --APPROXIMATION--.

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

**IN THE SPECIFICATION**

At column 1, line 59, after the word "substantially", delete "a" and insert therefor  
--the--.

At column 2, line 4, before "FFT", delete "a" and insert therefor --an--.

At column 2, line 10, before "FFT", delete "a" and insert therefor --an--.

At column 2, line 12, before "FFT", delete "a" and insert therefor --an--.

At column 2, line 58, before "FFT", delete "a" and insert therefor --an--.

At column 3, line 24, after the word "received", delete "samples" and insert therefor  
--sample--.

At column 4, line 19, before "MMSE", delete "A" and insert therefor --An--.

At column 4, line 61, delete Equation 19, and insert therefor -- $F(d) = \Lambda^{-1}F(A^H \underline{I})$ --.

At column 6, line 35, before the word "used", insert --is--.

At column 6, line 63, before "MMSE", delete "a" and insert therefor --an--.

At column 7, line 1, delete Equation 37, and insert therefor -- $\underline{y} = H^H \underline{r}$ --.

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

At column 7, line 46, delete Equation 42, and insert therefor

-- $\underline{s}^{(k+1)}$  =  $\underline{s}^{(k)}$  +  $\Delta_s^{(k)}$ , k=1, 2, ..., N-1--.

At column 7, line 55, before "MMSE", delete "a" and insert therefor --an--.

At column 7, line 60, before the words "and R", delete "y" and install therefor --y--.

At column 8, line 22, after the words "R and", delete "R<sub>bcip</sub>" and insert therefor --R<sub>bcir</sub>--.

At column 8, line 45, after the words "the last", delete "symbols" and insert therefor  
--symbol's--.

**IN THE CLAIMS**

Column 8, line 53, after the word "substantially", delete "a" and insert therefor --the--.

Column 9, line 11, after the word "substantially", delete "a" and insert therefor --the--.

Column 9, line 41, after the word "estimates", delete "is" and insert therefor --are--.

Column 9, line 44, after the word "estimates", delete "is" and insert therefor --are--.

Column 10, line 2, after the word "estimates", delete "is" and insert therefor --are--.

Column 10, line 9, after the word "substantially", delete "a" and insert therefor --the--.

Column 10, line 35, after the word "estimates", delete "is" and insert therefor --are--.

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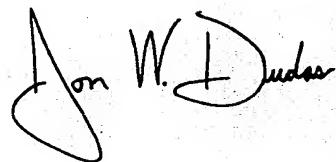
It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 10, line 38, after the word "estimates", delete "is" and insert therefor --are--.

Column 10, line 42, after the word "estimates", delete "is" and insert therefor --are--.

Signed and Sealed this

Twentieth Day of March, 2007



JON W. DUDAS  
*Director of the United States Patent and Trademark Office*